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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Tuthill)
Serial No.: 09/971,131)
Filed: October 4, 2001)
Title: SPINDLE NUT RETAINER)
Atty. Dkt.: 21488/04040)

Group Art Unit: 3722
Examiner: Brian Walsh
Customer No. 24024

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APPELLANTS' BRIEF (37 CFR § 1.192)

This brief is filed in furtherance of the Notice of Appeal previously transferred by
facsimile to the U.S. Patent and Trademark Office on November 17, 2003.

This brief is submitted in triplicate, as required pursuant to 37 CFR § 1.192(a). (If any
fees are due for this filing, please charge such additional required fees to our Deposit Account
No. 03-0172).

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This brief contains the items under the following headings in the order set forth below:

1.	REAL PARTY IN INTEREST.....	2
2.	RELATED APPEALS AND INTERFERENCES.....	2
3.	STATUS OF CLAIMS.....	2
4.	STATUS OF AMENDMENTS.....	3
5.	SUMMARY OF INVENTION.....	3
6.	ISSUES.....	4
7.	GROUPING OF CLAIMS.....	5
8.	REFERENCES.....	5
9.	ARGUMENTS	
	I. The issues under 35 U.S.C. § 103: Claims 1, 3-6, 13-17 and 19.....	5
	II. The issues under 35 U.S.C. § 103: Claim 2.....	7
	III. The issues under 35 U.S.C. § 103: Claim 7.....	9
	IV. The issues under 35 U.S.C. § 103: Claims 8-10, 12 and 18.....	10
	V. The issues under 35 U.S.C. § 103: Claims 20-24.....	12
10.	CONCLUSION.....	14
11.	APPENDIX A: CLAIMS INVOLVED IN THE APPEAL	
	The final page of this brief bears the attorney's signature.	

1. REAL PARTY IN INTEREST

The Dexter Axle Company, a Delaware company having an address of 2900 Industrial Parkway East, Elkhart, Indiana 46515, as assignee from inventor Tuthill, is the real party in interest.

2. RELATED APPEALS AND INTERFERENCES

There are no Appeals and/or Interferences known by appellant's legal representative which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

A. Total Number of Claims in Application

The total number of claims currently in the application is 23.

B. Status of the Claims

1. Claims previously canceled: 11.
2. Claims withdrawn from consideration but not canceled: None.
3. Claims pending: Claims 1-10, and 12-24.
4. Claims allowed: None.
5. Claims rejected: Claims 1-10 and 12-24.
6. Claims objected to: None.
7. Claims indicated as allowable if the § 112 rejections are overcome: None.

C. Claims on Appeal

The claims on appeal are: Claims 1-10 and 12-24.

4. **STATUS OF AMENDMENTS**

The Examiner has indicated in the Advisory Action that the Amendment filed September 2, 2003, after final rejection, would not be entered. The purpose of the amendment after final rejection was to propose additional limitations in independent Claim 20, which were believed to place Claim 20 in condition for allowance. Additionally, an amendment to the Specification was proposed to be added, without the addition of new subject matter, to describe in words, portions of the apparatus shown in the Drawings. Additionally, a proposed drawing correction was accepted by the Examiner.

5. **SUMMARY OF INVENTION**

A spindle nut retainer 20 is provided for preventing a nut 60 threaded upon a spindle 50 from unthreading and detaching from the spindle 50. (Specification Page 2 Line 23 - Page 3 Line 1) The spindle nut retainer 20 includes an integral base section 22 and peripheral section 28 maintaining a cup-shaped configuration. (Specification Page 3 Lines 3-4) The base section 22 includes a truncated aperture through which the spindle may pass, thus, causing rotational interference. (Specification Page 3 Lines 7-12, as amended) The peripheral section 28 includes a plurality of fingers 38 which form windows 36 therebetween used to form a locking connection between the spindle nut retainer 20 and the nut 60. (Specification Page 3 Lines 21-23) Corners 64 of the nut 60 protrude through the windows 36. (Specification Page 3 Line 29)

In separate embodiments the spindle nut retainer 20 is made from materials such as steel (Figure 4) or a polymer (Figures 2 and 3). In an embodiment where the spindle nut retainer 20 is

made of steel, the nut 60 is locked in place rotationally by the sides 48 of the fingers 38 of the peripheral section 28 which define the windows 36 through which the nut 60 protrudes. (Specification Page 4 Lines 27-29) The nut 60 is locked axially by the flared ends 39 of the fingers 38. (Specification Page 4 Lines 11-13) In an embodiment where the spindle nut retainer 20 is made of polymer, the nut's protrusion through the windows 36 and engagement with an angled surface 40 defined by the peripheral section 28 prevents rotational motion (Specification Page 3 Line 29 and Page 4, Lines 16-22) To prevent axial motion, the corners 64 of the nut 60 which pass through the windows 36 may be locked in place by the end surfaces 46 of the windows 36. (Specification Page 4 Lines 13-15) The windows 36 may be closed on an end opposite of the base section 22 by a continuous ring or partially closed by the flared ends 39 of each individual finger 38. (Specification Page 4 Lines 2-7) The spindle nut retainer 20 may be snapped into position over the nut 60 to provide the locking function. (Specification Page 4 Lines 10-13)

6. ISSUES

1. Whether Claims 1-5, 8, 9, and 12-17 are obvious under 35 U.S.C. §103 over U.S. Patent No. 5,967,723 to Duran in view of U.S. Patent No. 5,082,409 to Bias?

2. Whether Claims 7 and 18 are obvious under 35 U.S.C. §103 over U.S. Patent No. 5,967,723 to Duran in view of U.S. Patent No. 5,082,409 to Bias and in further view of U.S. Patent No. 5,967,721 to Giachinta et al.?

3. Whether Claim 6 is obvious under 35 U.S.C. §103 over U.S. Patent No. 5,967,723 to Duran in view of U.S. Patent No. 5,082,409 to Bias and in further view of U.S. Patent No. 5,215,336 to Worthing?

4. Whether Claim 10 is obvious under 35 U.S.C. §103 over U.S. Patent No. 5,967,723 to Duran in view of U.S. Patent No. 5,082,409 to Bias and in further view of U.S. Patent No. 5,618,143 to Cronin et al.?

5. Whether Claims 20-24 are obvious under 35 U.S.C. §103 over U.S. Patent No. 5,967,723 to Duran in view of U.S. Patent No. 5,082,409 to Bias further in view of U.S. Patent No. 5,967,721 to Giachinta et al. and further in view of U.S. Patent No. 5,586,790 to Bynum.?

7. **GROUPING OF CLAIMS**

The following groups of claims are regarded as being separately patentable.

Claims 1, 3-6, 13-17 and 19 stand or fall together;

Claims 2 stands alone;

Claim 7 stands alone;

Claims 8-10, 12, and 18 stand or fall together;

Claims 20-24 stand or fall together.

8. **REFERENCES**

U.S. Patent No. 5,967,723 to Duran.

U.S. Patent No. 5,082,409 to Bias.

U.S. Patent No. 5,967,721 to Giachinta et al. ("Giachinta").

U.S. Patent No. 5,215,336 to Worthing.

U.S. Patent No. 5,618,143 to Cronin et al. ("Cronin").

U.S. Patent No. 5,586,790 to Bynum.

9. **ARGUMENTS**

I. The issues under 35 U.S.C. § 103: Claims 1, and 3-6, 13-17 and 19

The Final Rejection rejects claims 1 and 3-5, 13-17 and 19 as being obvious under 35 U.S.C. § 103 in view of the combination of Duran and Bias. To establish a prima facie case of obviousness under § 103, the general rule is that three criteria must be met. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). First, there must be some suggestion or motivation to modify or combine the references. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art references must teach or suggest all of the claim limitations. Id. It is respectfully submitted that there is no suggestion or motivation to modify Duran in view of the teachings of Bias.

More specifically, claim 1 describes a spindle nut retainer comprising:

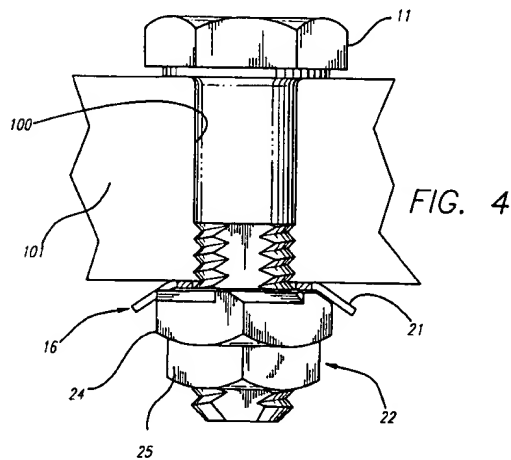
"an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

wherein said base section defines a central aperture; and
wherein said peripheral section has an interior surface and includes a plurality of fingers which define one or more longitudinal windows therebetween, said fingers including nut engaging surfaces on the interior surface of the peripheral section.”

Claims 3-6, 13-17 and 19 are similar.

The Final Rejection asserts that the combination of fingers generally perpendicular to the base section is set forth in the combination of Duran in view of Bias. The Final Rejection notes that the fingers of Duran’s retainer in view of Bias could be bent ninety degrees to effectively function as Applicant’s claimed invention. It is respectfully submitted that there is no motivation to combine the Duran and Bias references.

Duran teaches locking a specially configured nut including notched portions in place with a retainer. The retainer does not have a generally perpendicular peripheral section with respect to a base section. Such a configuration is not necessary due to the orientation of the special notches on the nut. Duran effectively locks the notched nut it discloses in place (see Figure 4). There is no motivation in Duran to vary the locking technique as set forth in applicant’s invention, other than hindsight reconstruction.



Bias teaches a clip embedded in a lug cover, wherein the clip holds the lug cover over a lug nut (see Figure 3). In general, the invention relates to a protective cover for covering a lug nut and bolt or stud for attaching a wheel rim to a vehicle. The clip includes an annular ring from which a plurality of projections (32 in Figure 3) downwardly extend. Each of the projections engage a side surface of an annular lug nut when the cover is installed. In Bias the

clip and enclosing cover are attached from the exterior, thus there is a reason to have means to hold them in place by pinching the lug nut. Duran's retainer clip is instead on the interior and is already locked in place by the nut. Thus, there is no motivation in Duran or Bias to combine their teachings. Further, as Duran teaches a clip to retain a nut in position while Bias teaches a cover for nut protection, not retention purposes, Bias may comprise only art outside of the field to which the invention of Duran pertains. A person of ordinary skill in the art to which the subject matter of Duran pertains cannot be presumed to be aware of art outside of the field of Duran. Such non-analogous art cannot be used to establish obviousness under § 103.

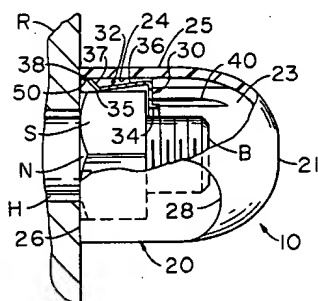


FIG. 3

The Final Rejection asserts that Claim 6 was obvious in view of the combination of Duran, Bias and Worthing. Claim 6 is dependent upon and includes all of the limitations of Claim 1. As previously stated, there was no motivation to combine the teachings of Duran and Bias. Additionally, Worthing does not teach a generally perpendicular peripheral section with respect to the base section. Thus, Worthing does not cure the deficiencies in Duran and Bias with respect to Claim 1 and as a result does not cure the deficiencies in Claim 6 which depends therefrom.

Therefore, it is respectfully submitted that Duran is not properly combinable with Bias and further that Worthing fails to teach or suggest all the limitation of Claims 1, 3-6, 13-17 and 19.

II. The issues under 35 U.S.C. § 103: Claim 2

The Final Rejection rejects claim 2 as being obvious under 35 U.S.C. § 103 in view of the combination of Duran and Bias. As already described, to establish a prima facie case of obviousness under § 103, the general rule requires that three criteria must be met. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438. First, there must be some suggestion or motivation to

modify or combine the references. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art references must teach or suggest all of the claim limitations. Id. Consequently, Duran and Bias must set forth each and every element as found in claim 2. It is respectfully submitted that the combination of Duran and Bias fail to fulfill this condition.

More specifically, claim 2 is of differing scope than claim 1 and 3-5 and describes the shape of the nut engaging surfaces as including “two angled surfaces”. The two angled surfaces on the inside surface of each finger are angled intersecting surfaces as shown at 40 in Figure 2.

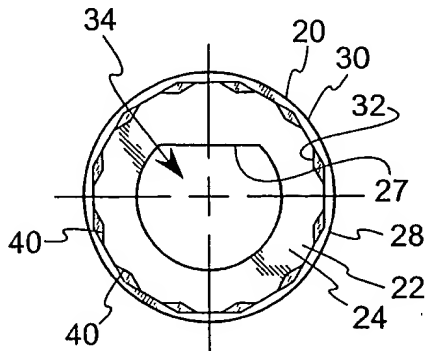
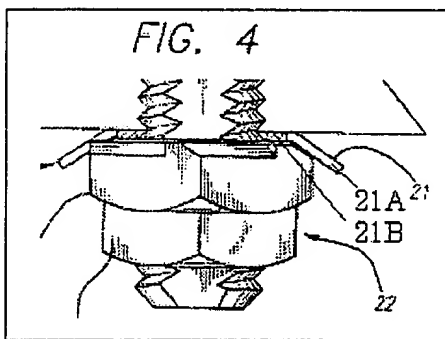


FIG. 2

The Final Rejection asserts that Duran discloses that the nut engaging surfaces each comprise two angled surfaces (21A, 21B) in Figure 4 of Duran (below).



Claim 2 includes a peripheral section with fingers having two angled nut engaging surfaces. Duran discloses two angled surfaces, but these surfaces are not angled nut engaging surfaces upon a finger of a peripheral section which is generally perpendicular to the base section.

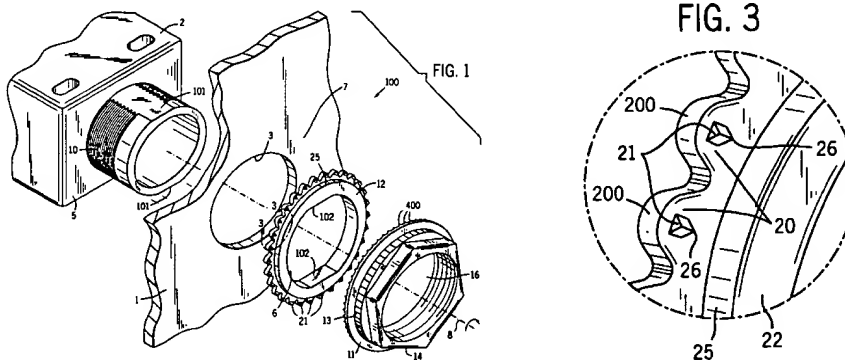
Therefore, it is respectfully submitted that Duran and Bias fail to teach or suggest the limitations of Claim 2.

III. The issues under 35 U.S.C. § 103: Claim 7

The Final Rejection rejects claim 7 as being obvious under 35 U.S.C. § 103 in view of the combination of Duran, Bias and Giachinta. As already described, to establish a prima facie case of obviousness under § 103, the general rule requires that three criteria must be met. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438. First, there must be some suggestion or motivation to modify or combine the references. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art references must teach or suggest all of the claim limitations. Id. Consequently, Duran, Bias and Giachinta must set forth each and every element as found in claim 7. It is respectfully submitted that the combination of Duran, Bias and Giachinta fail to fulfill this condition.

More specifically, claim 7 defines the spindle nut retainer of claim 1 “wherein said peripheral section includes an integrally formed ring at an end of and interconnecting said fingers opposite said base section.”

The Final Rejection asserts that Giachinta defines an integrally formed ring at an end of the peripheral section opposite the base section. Referring to Figures 1, 3 and 6 from Giachinta, specifically the Final Rejection states “Giachinta et. al. discloses a peripheral section 200 including an integrally formed ring 25 at an end opposite the base section 23. (see Figures 3 and 6)



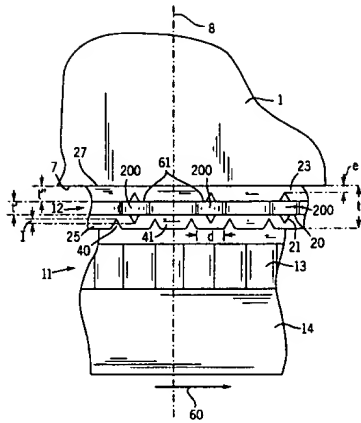


FIG. 6

Clearly Giachinta does not itself teach a ring at the end of fingers opposite a base section. There are no additional elements at the ends of the fingers 200 of Giachinta opposite the shoulder section 23.

Additionally, there is no motivation in Duran to combine the teachings of Giachinta with Duran. Giachinta discloses a fastener system with a nut 11 and washer 12 wherein the nut includes protrusions 21 and the washer includes detents 41 or vice-versa. The nut and washer combination functions when the protrusions are forced into the detents to create a system that resists loosening. The Final Rejection asserts that it would have been obvious to modify the retainer of Duran and Bias to include the ring and fingers with protrusions taught by Giachinta since Giachinta teaches that the ring and protrusions prevent rotation. However, if only the protrusions are combined with Duran, as suggested by the Office Action, the system of Duran is not effective. The nut of Duran does not include the required mating detents to make a system which prevents rotation. Further, there is no motivation in Duran to change the existing nut and bolt locking system to a protrusion and detent system.

Therefore, it is respectfully submitted that Duran, Bias and Giachinta fail to teach the limitations of Claim 7 and further that Giachinta is not properly combinable with Duran.

IV. The issues under 35 U.S.C. § 103: Claims 8-10, 12 and 18

The Final Rejection rejects claims 8, 9 and 12 as being obvious under 35 U.S.C. § 103 in view of the combination of Duran and Bias. As already described, to establish a prima facie case

of obviousness under § 103, the general rule requires that three criteria must be met. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438. First, there must be some suggestion or motivation to modify or combine the references. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art references must teach or suggest all of the claim limitations. Id. It is respectfully submitted that there is no suggestion or motivation to modify Duran in view of the teachings of Bias.

More specifically, claim 8 describes a spindle nut retainer comprising:

“an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

wherein said base section defines a central aperture; and

wherein said peripheral section comprises a plurality of fingers which create one or more longitudinal windows therebetween, said fingers including a flared end bent towards the center of said spindle nut retainer.”

Claim 8 is of a differing scope from Claims 1-6 in that claim 8 includes fingers having a flared end bent towards the center of the spindle nut retainer. Claims 9, 10, 12 and 18 are similar. As previously stated with respect to Claims 1 and 3-5, there is no motivation to combine Duran and Bias to provide a spindle nut container having an integral base section and a generally perpendicular peripheral section.

Further Duran and Bias must set forth each and every element as found in claim 8. It is respectfully submitted that the combination of Duran and Bias fail to fulfill this condition. The Final Rejection states that Duran discloses fingers including a flared end bent towards the center of the spindle nut retainer. However there is no disclosure of a flared end in Duran. In addition to the deficiencies set forth above, the Duran and Bias patents commonly fail to disclose fingers having flared ends bent toward the center of the spindle nut retainer as required by Claim 8.

The Final Rejection asserts that Claim 10 was obvious in view of the combination of Duran, Bias and Cronin. Claim 10 is dependent upon and includes all of the limitations of Claim 8. As previously stated, there was no motivation to combine the teachings of Duran and Bias. Additionally, Cronin does not teach a generally perpendicular peripheral section with respect to the base section. Further, neither Duran, Bias nor Cronin disclose fingers including flared ends.

Thus, Cronin does not cure the deficiencies in Duran and Bias with respect to Claim 8 and as a result does not cure the deficiencies in Claim 10 which depends therefrom.

The Final Rejection asserts that Claim 18 was obvious in view of the combination of Duran, Bias and Giachinta. Claim 18 is dependent upon and includes all of the limitations of Claim 8. As previously stated, there was no motivation to combine the teachings of Duran and Bias. Additionally, Giachinta does not teach a generally perpendicular peripheral section with respect to the base section. Further, neither Duran, Bias nor Giachinta disclose fingers including flared ends. Thus, Giachinta does not cure the deficiencies in Duran and Bias with respect to Claim 8 and as a result does not cure the deficiencies in Claim 18 which depends therefrom.

Therefore, it is respectfully submitted that Duran is not properly combinable with Bias and further that Cronin or Giachinta fails to teach or suggest all the limitation of Claims 8-10, 12 and 18.

V. The issues under 35 U.S.C. § 103: Claims 20-24

The Final Rejection rejects claims 20-24 as being obvious under 35 U.S.C. § 103 in view of the combination of Duran, Bias, Giachinta and Bynum. As already described, to establish a prima facie case of obviousness under § 103, the general rule requires that three criteria must be met. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438. First, there must be some suggestion or motivation to modify or combine the references. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art references must teach or suggest all of the claim limitations. Id. It is respectfully submitted that there is no suggestion or motivation to modify Duran in view of the teachings of Bias, Giachinta or Bynum.

More specifically, claim 20 describes a spindle nut retainer comprising:

“an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

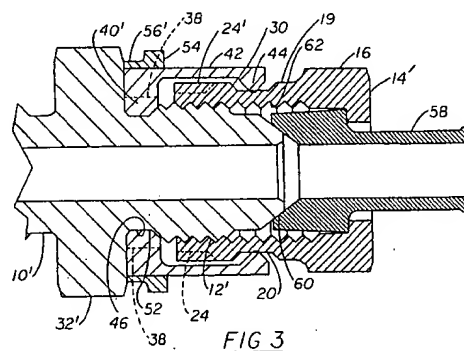
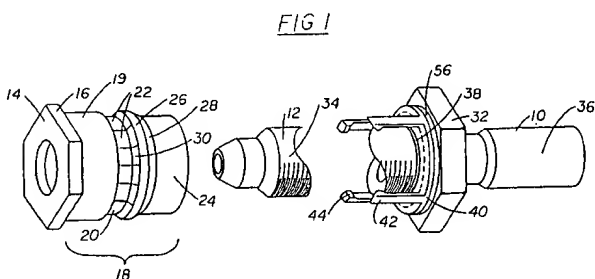
wherein said base section defines a central aperture having a truncated circular shape for receiving the complementary shaped truncated circular cross-sectioned spindle to prevent rotation of the spindle nut retainer about the spindle;

wherein said peripheral section defines one or more longitudinal windows into which one

or more corners of the nut protrude, preventing rotation of the nut; and

wherein said peripheral section includes inwardly extending portions for snapping over the nut to lock said spindle nut retainer in place.”

Claims 21-24 are similar. It has already been submitted that there is no suggestion or motivation to modify Duran in view of the teachings of Bias or Giachinta. Further it is respectively submitted that there is no suggestion or motivation to modify Duran in view of the teachings of Bynum. Bynum teaches a reusable fastener capture device, yet Duran already has a reusable device. Bynum teaches a device where knobs 44 on the end of tangs 40 engage the surface of flats 22 on a nut. Yet Duran already has engagement within prepared notches which provides superior locking strength. Therefore there is no motivation to combine the teachings of Duran and Bynum. The Final Rejection combines the teachings of four references to anticipate the invention claim in Claims 20-24. As previously stated due to the different functions the inventions of Duran and Bias perform these patent documents may describe non-analogous art. Additionally, although Giachinta and Bynum describe fastener systems, the system of Bynum specifically is unlike that of Duran. The motivation to combine Duran with the rest of the group cited in the Final Rejection is lacking, other than through hindsight reconstruction.



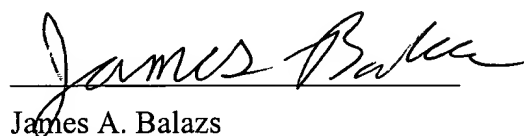
Additionally, it is respectfully submitted that the combination of Duran, Bias, Giachinta and Bynum fail to fulfill the condition that each and every element found in the claims is disclosed in the prior art combination. Claim 20 includes a “peripheral section defining one or more longitudinal windows into which one or more corners of the nut protrude, preventing rotation of the nut. It is respectfully submitted that this limitation is not disclosed by the prior art combination.

10. CONCLUSION

For The reasons advanced above, Appellant respectfully urges that the rejection of claims 1-10 and 12-24 as being unpatentable under 35 U.S.C. § 103(a) is improper. Accordingly, reversal of the rejections in this appeal is respectfully requested.

Respectfully submitted,

Date: 1/16/04


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11. APPENDIX OF CLAIMS

The text of the claims on appeal are as follows:

1. A spindle nut retainer for preventing disengagement of a nut threadedly engaged to a spindle, comprising:

an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

wherein said base section defines a central aperture; and

wherein said peripheral section has an interior surface and includes a plurality of fingers which define one or more longitudinal windows therebetween, said fingers including nut engaging surfaces on the interior surface of the peripheral section.

2. The spindle nut retainer of claim 1 wherein said nut engaging surfaces each comprise two angled surfaces.

3. The spindle nut retainer of claim 1 wherein said central aperture is D-shaped.

4. The spindle nut retainer of claim 1 wherein said base section is flat.

5. The spindle nut retainer of claim 1 wherein said base section is reinforced around said central aperture.

6. The spindle nut retainer of claim 1 made from polymer.

7. The spindle nut retainer of claim 1 wherein said peripheral section includes an integrally formed ring at an end of and interconnecting said fingers opposite said base section.

8. A spindle nut retainer for preventing disengagement of a nut threadedly engaged to a spindle, comprising:

an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

wherein said base section defines a central aperture; and

wherein said peripheral section comprises a plurality of fingers which create one or more longitudinal windows therebetween, said fingers including a flared end bent towards the center of said spindle nut retainer.

9. The spindle nut retainer of claim 8 wherein said central aperture is D-shaped.

10. The spindle nut retainer of claim 8 wherein said base section includes a tab bent in line with said fingers.

12. The spindle nut retainer of claim 8 made from steel.

13. A spindle nut locking system comprising:

a spindle having a first end;

a nut threadedly engaged to said spindle, said nut having flats;

a spindle nut retainer, circumscribing said nut and said spindle, comprising an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration wherein said base section defines a central aperture, and wherein said peripheral section includes a plurality of fingers which create one or more longitudinal windows therebetween.

14. The spindle nut locking system of claim 13 wherein said spindle has a D-shaped cross-section adjacent to said first end.

15. The spindle nut locking system of claim 14 wherein said central aperture is D-shaped and

said spindle nut retainer circumscribes the D-shaped cross section of said spindle resulting in rotational interference between said spindle nut retainer and said spindle.

16. The spindle nut locking system of claim 13 wherein said peripheral member has an interior surface which defines a plurality of nut engaging surfaces.

17. The spindle nut locking system of claim 13 wherein said peripheral section comprises a plurality of fingers which create one or more longitudinal windows therebetween, said fingers including a flared end bent towards the center of said spindle nut retainer.

18. The spindle nut retainer of claim 8 wherein at least one of said fingers includes first and second lobes at an end of said peripheral section opposite said base section.

19. The spindle nut locking system of claim 13 wherein said spindle includes a threaded section and a non-threaded section and said nut includes a first face adjacent said non-threaded spindle section and a second face on an opposite side of said nut and wherein said spindle nut retainer base section is adjacent said opposite side of said nut.

20. A spindle nut retainer for placing over a nut threadedly engaged to a spindle having a threaded section with a truncated circular cross-section, said spindle nut retainer preventing disengagement of the nut and comprising:

an integral base section and a generally perpendicular peripheral section maintaining a cup-shaped configuration while in place over the nut;

wherein said base section defines a central aperture having a truncated circular shape for receiving the complementary shaped truncated circular cross-sectioned spindle to prevent rotation of the spindle nut retainer about the spindle;

wherein said peripheral section defines one or more longitudinal windows into which one

or more corners of the nut protrude, preventing rotation of the nut; and

wherein said peripheral section includes inwardly extending portions for snapping over the nut to lock said spindle nut retainer in place.

21. The spindle nut retainer of claim 20 wherein said windows extend from said base section to an open end of the peripheral section opposite said base section.

22. The spindle nut retainer of claim 20 wherein said windows extend from said base section to an end of said peripheral section opposite said base section closed by a continuous ring.

23. The spindle nut retainer of claim 22 wherein said peripheral section further defines nut engaging surfaces on an interior surface.

24. The spindle net retainer of claim 21 wherein said inwardly extending portions are flared ends of fingers upon the peripheral section.